Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A lighting system comprising:

a mixing cavity that mixes light;

an optical cable attached to the mixing cavity, at least a portion of the optical cable being outside the mixing cavity;

a color sensor attached to the optical cable, the color sensor sampling light from within the mixing cavity via the optical cable, the color sensor being located outside the mixing cavity, the color sensor comprising:

a plurality of photo sensors each photo sensor from the plurality of photo sensors having an integrated color filter, the color sensor generating for each photo sensor an output signal with a voltage based on filtered light incident upon the photo sensor; and,

a color controller that controls light color within the mixing cavity, the color controller using information from the generated output signal for each photo sensor as feedback about light color within the mixing cavity.

2. (Original) A lighting system as in claim 1 wherein within the mixing cavity, light emitting diodes of a plurality of colors generate the light that is mixed.

3. (Original) A lighting system as in claim 1 wherein within the mixing cavity, light emitting diodes of a plurality of colors generate the light that is mixed, the plurality of colors including red, green and blue.

4. (Previously Presented) A lighting system comprising:

a mixing cavity that mixes light;

an optical cable attached to the mixing cavity wherein the optical cable is attached to the mixing cavity by a substantially optically clear and transmissive epoxy;

a color sensor attached to the optical cable, the color sensor sampling light from within the mixing cavity via the optical cable; and,

a color controller that controls light color within the mixing cavity, the color controller using information from the color sensor as feedback about light color within the mixing cavity.

5. (Previously Presented) A lighting system as in claim 4 wherein when the optical cable is attached to the color sensor by the substantially optically clear and transmissive epoxy, a resulting joint is shielded by a substantially optically opaque epoxy.

6. (Currently Amended) A lighting system as in claim ~~1~~ 4 wherein a color filter is located in one of the following locations:

between the optical cable and the color sensor;

within the mixing cavity so as to filter light received by the optical cable.

7. (Original) A lighting system as in claim 1 wherein the optical cable is a fiber optic cable.

8. (Currently Amended) A lighting system comprising:

a mixing cavity that mixes light;

an optical cable attached to the mixing cavity, at least a portion of the optical cable being outside the mixing cavity;

a color sensor attached to the optical cable, the color sensor sampling light from within the mixing cavity via the optical cable, the color sensor being located outside the mixing cavity; and,

a color controller that controls light color within the mixing cavity, the color controller using information from the color sensor as feedback about light color within the mixing cavity;

wherein the optical cable is one of the following:

a light guide shielded from external ambient light,

a light guide not shielded from external ambient light,

a light panel shielded from external ambient light,

a light panel not shielded from external ambient light.

9. (Currently Amended) A lighting system comprising:

~~mixing means for mixing~~a mixing cavity that mixes light;

sensor means for sensing color of light, the sensor means comprising:

a plurality of photo sensors, each photo sensor from the plurality of photo sensors having an integrated color filter, the sensor means generating for each photo sensor an output signal with a voltage based on filtered light incident upon the photo sensor, the plurality of photo sensors being located outside the mixing cavity;

cable means, connected between the mixing ~~means~~ cavity and the sensor means, for transporting light mixed by the mixing ~~means~~ cavity for being sensed by the sensor means, at least a portion of the cable means being located outside the mixing cavity; and,

control means for controlling light color of light mixed by the mixing ~~means~~cavity, the control means using information from the generated output signal for each photo sensor as feedback about light color within the mixing cavity.

10. (Currently Amended) A lighting system as in claim 9 wherein within the mixing ~~means~~cavity, light emitting diodes of a plurality of colors generate the light that is mixed.

11. (Currently Amended) A lighting system as in claim 9 wherein within the mixing ~~means~~cavity, light emitting diodes of a plurality of colors generate the light that is mixed, the plurality of colors including red, green and blue.

12. (Currently Amended) A lighting system comprising:

mixing means for mixing light;

sensor means for sensing color of light;

cable means, connected between the mixing means and the sensor means, for transporting light mixed by the mixing means for being sensed by the sensor means wherein the cable means is attached to the mixing means by a substantially optically clear and transmissive epoxy; and,

control means for controlling light color of light mixed by the mixing means, the control means using information from the sensor means as feedback about light color within the mixing ~~cavity~~means.

13. (Previously Presented) A lighting system as in claim 12 wherein when the cable means is attached to the sensor means by the substantially optically clear and transmissive epoxy, a resulting joint is shielded by a substantially optically opaque epoxy.

14. (Currently Amended) A lighting system comprising:

mixing means for mixing light;

sensor means for sensing color of light, the sensor means comprising:

a plurality of photo sensors, each photo sensor from the plurality of photo sensors having an integrated color filter, the sensor means generating for

each photo sensor an output signal with a voltage based on filtered light incident upon the photo sensor;

cable means, connected between the mixing means and the sensor means, for transporting light mixed by the mixing means for being sensed by the sensor means; and

control means for controlling light color of light mixed by the mixing means, the control means using information from the generated output signal for each photo sensor as feedback about light color within the mixing cavity;

~~as in claim 9~~ wherein a neutral density filter is located between the cable means and the sensor means.

15. (Currently Amended) A lighting system comprising:

mixing means for mixing light;

sensor means for sensing color of light, the sensor means comprising:

a plurality of photo sensors, each photo sensor from the plurality of photo sensors having an integrated color filter, the sensor means generating for each photo sensor an output signal with a voltage based on filtered light incident upon the photo sensor;

cable means, connected between the mixing means and the sensor means, for transporting light mixed by the mixing means for being sensed by the sensor means; and

control means for controlling light color of light mixed by the mixing means, the control means using information from the generated output signal for each photo sensor as feedback about light color within the mixing cavity;

~~as in claim 9~~ wherein a neutral density filter is situated within the mixing means so as to filter light received by the cable means.

16. (Original) A lighting system as in claim 9 wherein the cable means is a fiber optic cable.

17. (Currently Amended) A method comprising the following:

mixing light within a mixing cavity;

transporting light from the mixing cavity, through an optical cable, to a color sensor, the color sensor being located outside the mixing cavity and at least a portion of the optical cable being outside the mixing cavity;

sampling the transported light by the color sensor, the color sensor comprising a plurality of photo sensors, each photo sensor from the plurality of photo sensors having an integrated color filter, the color sensor generating for each photo sensor an output signal with a voltage based on filtered light incident upon the photo sensor; and,

controlling light color within the mixing cavity based on information from the transported light sampled by the color sensor.

18. (Original) A method as in claim 17 additionally comprising the following step:

generating light within the mixing cavity by light emitting diodes of a plurality of colors.

19. (Original) A method as in claim 17 additionally comprising the following step:

generating light within the mixing cavity by light emitting diodes of a plurality of colors, wherein the plurality of colors include red, green and blue.

20. (Currently Amended) A method comprising the following:

mixing light within a mixing cavity;

transporting light from the mixing cavity, through an optical cable, to a color sensor;

sampling the transported light by the color sensor, the color sensor comprising a plurality of photo sensors, each photo sensor from the plurality of photo sensors having an integrated color filter, the color sensor generating for each photo sensor an output signal with a voltage based on filtered light incident upon the photo sensor; and,

controlling light color within the mixing cavity based on information from the transported light sampled by the color sensor;~~as in claim 17~~

wherein transporting light from the mixing cavity, includes passing the light through a neutral density filter.